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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MCCLLOUD, RENATA D

ART UNIT PAPER NUMBER

2837

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/662,052

Applicant(s)

BRANECKY ET AL

Examiner

Renata McCloud

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-16, 19-42 and 45-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-16, 20-33, 35-42 and 46-58 is/are rejected.
- 7) ☒ Claim(s) 7, 19, 34 and 45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/17/2004</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "power inputs" "first voltage input", "second voltage input" "duty cycle", "dc bus voltage", "two power switches" "half bridge" "stator", "rotor", "first node", "second node" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "first voltage input" and "second voltage input".

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 23, 35, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim depends from cancelled claim 18

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 8-14, 22, 24-31, 36, 38,39, 48-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Tolbert Jr et al (US 6172476).

Claim 1: a controller comprising a switch (14) coupled to a motor having a plurality of power inputs (18,20) and operable to couple one of the inputs to the motor

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(Col. 5:1-7); a first voltage input coupled to one of the power inputs (18) of the switch (14); and configured to receive a first voltage (23), and operable to provide the first voltage to the switch (14); an inverter (12) coupled to a second voltage input (24) and a second power input (20) of the switch (14) and configured to be activated by a second voltage (12) received at the second voltage input to frequency regulate the second voltage (12) to generate a frequency regulated voltage (30Hz) and to provide the frequency regulates voltage to the switch (20).

Claim 8: a rectifying module (70) coupled to the inverter (76) and configured to power the inverter.

Claim 9: the inverter (76) comprises a half bridge

Claims 10 and 48: the first voltage indicated a high speed excitation (Col. 5:20-30) and the second voltage indicates low speed excitation (Col. 5:32-39).

Claims 11, 22, and 49: a multi-tapped motor (Fig. 1: motor), and the first voltage (23) represents one of plurality of motor speed at one operating frequency.

Claims 12, 36, 38, and 50: the frequency is 60 Hz (Col. 5:20-27).

Claims 13, 24, and 51: the machine comprises a single speed motor, the first voltage represents a motor speed at one operating frequency (Col. 5:20-30).

Claims 14, 25, and 52: one frequency is 60 Hz (Col. 5:20-27).

Claim 26: a method comprising providing a source of power (23) to a machine through a relay (14) when a first speed is selected; generating a second source (12) of power when a second speed is selected, the second source (12) connected to the machine through the relay (14); and switching the relay to connect the machine to the

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one source (23) corresponding to the first speed and to the second source (12) corresponding to the second speed (Col. 4: 54-67).

Claim 27: monitoring a dc bus voltage and adjusting the inverter output duty cycle based on the dc bus voltage (Col. 5: 40-50)

Claim 28: providing conventional line power (23) to the voltage source.

Claim 29: generating the second source of power (power from 12) comprises activating an inverter (12) connected to the one source of power (23).

Claim 30: the second source of power comprises activating a half-bridge inverter (12; Col. 5:51-53 a single phase inverter) connected to the one source of power (23).

Claim 31: the inverter includes only to switches (12; Col. 5:51-53 a single phase inverter).

Claim 39: a controller comprising an inverter (12) to receive a first voltage (voltage along 22) to be activated by the first voltage to frequency regulate the first voltage; and a switch (14) coupled to the inverter (12) configured to receive the frequency regulated voltage (voltage at 24) and a second voltage (voltage out from inverter) and to apply one of the voltages to the machine.

7. Claims 1, 2,4, 8, 9, 11, 15, 16, 20,39,40,42,46,47, 53-58 are rejected under 35 U.S.C. 102(b) as being anticipated by Iizuka et al (US 4566289).

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Claim 1: a controller comprising a switch (3) coupled to a motor (4) having a plurality of power inputs (3-1,3-2) and operable to couple one of the inputs to the motor a first voltage input coupled to one of the power inputs (3-2) of the switch (3), and configured to receive a first voltage (voltage from 3-2), and operable to provide the first voltage to the switch (3); an inverter (2) coupled to a second voltage input (voltage on 3-1) and a second power input (3-1) of the switch (3) and configured to be activated by a second voltage (3-1) received at the second voltage input to frequency regulate the second voltage to generate a frequency regulated voltage and to provide the frequency regulates voltage to the switch (Col. 2:2-7).

Claim 15: controller comprising a voltage input (in to 3) configured to receive a first voltage; a relay (3-2) coupled to the input and configured to relay the first voltage (voltage from 3-2) and generate a second voltage (Col. 2:2-7); a half-bridge inverter (2) coupled to the relay (3) and configured to be activated by the second voltage (Col. 2: 2-7) and generate a frequency-regulated voltage (Col. 2:2-7); a controller (11) coupled to the first and second voltages and configured to generate a control signal; and a second relay (3-1) coupled to the controller (11) and configured to select an electric machine voltage from the first voltage and the frequency regulated voltage using the control (Col. 1:60-2:7, 2:27-67).

Claims 2 , 16, and 40: a feedback monitor (14) configured to monitor the frequency regulated voltage and to accordingly configure the inverter to regulate the inverter output duty cycle (Col. 2:33-65).

Claims 4 and 42: a controller (11) configured to receive the first and second voltages (24) to generate a signal and couple the first voltage and the frequency regulated voltage to the motor with the control signal applied to the switch (Col. 2:2-65).

Claims 8, 20, and 46: a rectifying module (13) coupled to the inverter (2) and configured to power the inverter.

Claims 9 and 47: the inverter (2) comprises a half bridge.

Claim 11: a multi-tapped motor (4), and the first voltage represents (voltage from 3-2); one of plurality of motor speed at one operating frequency.

Claim 39: a controller comprising an inverter (2) to receive a first voltage to be activated by the first voltage to frequency regulate the first voltage ; and a switch (3) coupled to the inverter configured to receive the frequency regulated voltage (voltage from inverter at 3-1) and a second voltage (voltage from 1 along 3-2) and to apply one of the voltages to the machine (4)

Claim 53: a method comprising detecting power at first and second nodes (nodes beside 1) of a controller; detecting power at a second node of a controller; generating a signal based on the detecting; and using the detected power to energize the machine (4) when the signal indicates power is present at least one of the first and second nodes (Col. 2:55-61).

Claim 54: providing the detected power to the inverter (2), the inverter generating an inverter power and using the inverted power t energize the machine (4).

Claim 55: The detected power comprises at least one of an unregulated power and a regulated power (14 detects source voltage).

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Claim 56: the power detecting comprises detecting whether a voltage is present (Col. 2:55-58).

Claim 57: generating a first signal based at least in part on the act of detecting whether power is present at the first node of the controller; generating a second signal based at least in part on the act of detecting whether power is present at the second node (Col. 2:55-67).

Claim 58: a motor (4), and a controller connector to the motor, the controller comprising a first node to receive a first power, a second node to receive a second power (nodes beside 1); a first circuit (14) to detect whether the first and second powers are at the first and second nodes and generate a signal; a second circuit (11) to receive the at least one signal and generate a switch control signal, and a switch (3) to energize the motor based at least in part on the switch control signal, the switch using at one of the first and second powers (power from 2 or 1) to energize the motor when the signal (signal from 14) indicates that at least one of the first and second powers is present at one of the first and second nodes.

8. Claims 15, 20-33,35,36,38,39,48,49 are rejected under 35 U.S.C. 102(b) as being anticipated by Lipo et al (US 6570778)

Claim 15: controller comprising a voltage input (22) configured to receive a first voltage; a relay (70) coupled to the input and configured to relay the first voltage and generate a second voltage (Col. 6:38-63); a half-bridge inverter (30) coupled to the relay

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(40) and configured to be activated by the second voltage and generate a frequency-regulated voltage (Col. 6:10-13); a controller (55) coupled to the first and second voltages and configured to generate a control signal; and a second relay (71) coupled to the controller (55) and configured to select an electric machine voltage from the first voltage and the frequency regulated voltage using the control (Col. 6:52-63).

Claim 20: a rectifying module (26) coupled to the inverter (20) and configured to power the inverter.

Claims 21 and 48: the first voltage indicates high speed and the second voltage indicates low speed (Col. 6:42-48).

Claims 22 and 49: a multitapped motor (35), the first voltage represents one of a plurality of speed voltages (Col. 6:42-48).

Claim 23: one frequency is 60Hz (Col. 5:54-56).

Claim 24: the machine comprises a single speed motor (35), and the first voltage represents a motor speed at one operating frequency (Col. 6:10-20).

Claim 25: one frequency is 60Hz (Col. 5: 54-56).

Claim 26: a method comprising providing a source of power (38) to a machine (35) through a relay (40) when a first speed is selected; generating a second source (41) of power when a second speed is selected, the second source (41) connected to the machine through the relay (40); and switching the relay to connect the machine to the one source corresponding to the first speed and to the second source corresponding to the second speed (38,41).

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Claim 27: monitoring a dc bus voltage (Col. 5: 20-30) and adjusting the inverter (30) output duty cycle based on the dc bus voltage (Col. 7:62-8:2).

Claim 28: providing conventional line power to the power source (21).

Claim 29: generating the second source of power comprises activating an inverter (30) connected to the one source of power (21).

Claim 30: the second source of power comprises activating a half-bridge inverter (30) connected to the one source of power (21).

Claim 31: the inverter includes only to switches (31, 32).

Claim 32: switching the relay comprises generating a signal at the microcontroller (52) based on the first and second speeds (speeds from 38,41); and applying the control signal at the relay (40).

Claim 33: detecting a summed voltage from voltages corresponding to the first and second speeds; inputting the summed voltage to and A/D converter (Fig. 3: 94); and generating a control signal to select the switch (Col. 7: 20-8:14).

Claim 35: a multitapped motor (35), the method comprising running the motor at the first speed with the one operating frequency (60Hz; Col. 6: 10-20).

Claims 36 and 38: the operating frequency s 60 Hz (60Hz, Col. 6: 10-20).

Claim 39: a controller comprising an inverter (30) to receive a first voltage to be activated by the first voltage to frequency regulate the first voltage; and a switch (40) coupled to the inverter (30) configured to receive the frequency regulated voltage and a second voltage (38) and to apply one of the voltages to the machine (35).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tolbert Jr. et al as applied to claims 1 and 39 above, and further in view of Miyazaki et al (US 5212438).

Claims 3 and 41: Tolbert Jr et al teach the limitations of claim 1. Referring to claim 3, Tolbert Jr et al teach the claimed device except for a relay to relay an AC current source as the first voltage input. Miyazaki et al teach that it is known in the art to provide a relay (Fig. 1: 2) to relay the AC current (Col. 1:15-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a relay apparatus of Tolbert with the relay of Miyazaki et al in order to connect and disconnect AC current to the apparatus.

11. Claims 3 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipo et al as applied to claims 1 and 39 above, and further in view of Miyazaki et al (US 5212438).

Claims 3 and 41: Lipo et al teach the limitations of claim 1. Referring to claim 3, Lipo et al teach the claimed device except for a relay to relay an AC current source as

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the first voltage input. Miyazaki et al teach that it is known in the art to provide a relay (Fig. 1: 2) to relay the AC current (Col. 1:15-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a relay apparatus of Lipo with the relay of Miyazaki et al in order to connect and disconnect AC current to the apparatus.

Allowable Subject Matter

12. Claims 7, 19, 34, 45 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

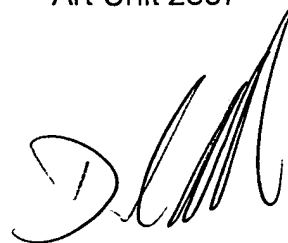
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDM

Renata McCloud
Examiner
Art Unit 2837



DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER